

A survey of the highland grassland endemics in Mau Narok/Molo Important Bird Area, Kenya

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L'étendue, la répartition et la qualité de ce qui reste de l'habitat herbeux dans les Mau Narok-Molo grasslands, Zone d'Importance pour la Conservation des Oiseaux (ZICO) au Kenya, ont été évaluées du 16 au 24 septembre 2001. Les auteurs ont également estimé la répartition et la densité de deux espèces globalement menacées et à répartition restreinte, la Sentinelle de Sharpe *Macronyx sharpei* et la Cisticole des Aberdare *Cisticola aberdare*. La plus grande partie (48%) de la ZICO était constituée de cultures, tandis que les zones herbeuses ne comprenaient que 33%, les plus importantes se trouvant dans la partie la plus méridionale, occupée principalement par la communauté pastorale Masai. La Sentinelle de Sharpe avait une densité de 1,2 individus par ha et était la deuxième espèce la plus communément observée. La Cisticole des Aberdare a été observée dans trois parcelles seulement, avec un total de sept individus. La conversion à grande échelle en cultures d'orge et de froment constitue une menace grave pour les zones herbeuses. La ZICO en possède toutefois encore des étendues considérables de haute qualité et elle est ainsi importante pour la conservation des espèces endémiques de cet habitat. Les initiatives de conservation devraient donc se concentrer sur ces zones.

The Mau Narok/Molo Grasslands Important Bird Area (IBA) holds significant areas of Kenya's unique highland grasslands. This and Kinangop Grasslands IBA (Fig 1), either side of the central Rift Valley, are the only sites that hold significant areas of this habitat, which lacks any formal protection in Kenya and is rapidly vanishing. They are home to several migratory bird species and various specialised grassland birds, and are of key importance as they harbour the restricted-range Sharpe's Longclaw

Macronyx sharpei and Aberdare Cisticola *Cisticola aberdare*, both classified as Endangered by BirdLife International¹. No adequate information concerning the status of either species or their grassland habitat is available from Mau Narok/Molo Grasslands. Between 16 and 24 September 2001, we surveyed the extent, distribution and condition of the remaining grassland habitat, and estimated the distribution and density of these species. We also used the survey to (1) increase awareness among the local community of the conservation value of the IBA, (2) make opportunistic contacts with interested members of this community with the aim of initiating a local conservation group or Site Support Group (SSG), and (3) involve and train three members of the Kinangop Grasslands SSG in grassland survey methods. Here, we present the basic results of our work.

Mau Narok/Molo Grasslands

The Mau Narok/Molo Grasslands IBA is an extensive montane grassland situated on the crest of the Mau escarpment, which forms the western wall of the central Rift Valley in Kenya. This high, open plateau occupies c80 km south-east to north-west, and is bounded (and partially interrupted) by the Mau Forest complex. Rainfall is c1,000 mm per year, and the original vegetation is short grassland, with some heather and scrub on ridges where soils are deeper. The area has high potential for agriculture, and has gradually been settled since the 1950s; it is now heavily populated, with a landscape severely modified by cultivation. Cereals are the main crops.

The IBA is sited in Nakuru and (a small part of) Narok districts, within Rift Valley province. Population density in Nakuru district is high (164 per km²)⁸. The main occupants of the study area are smallholders of the Kikuyu

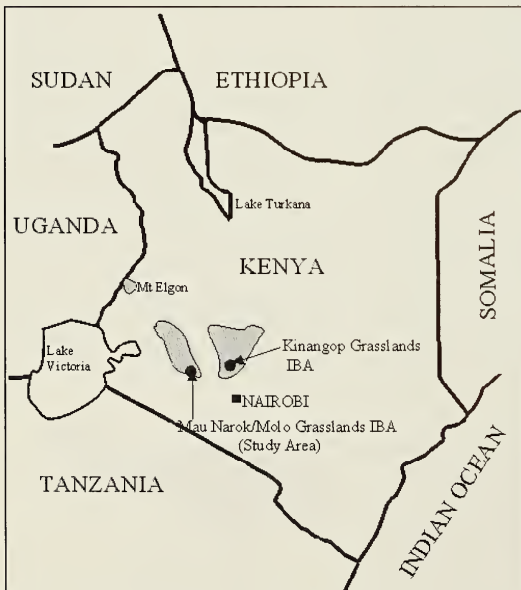


Figure 1. Total range of Sharpe's Longclaw *Macronyx sharpei* (shaded area) showing the locations of the study area (Mau Narok/Molo Grasslands IBA) and Kinangop Grasslands (the probable stronghold of the species).

and Kalenjin communities (Molo and northern Mau Narok) and the Masai community (who are traditionally livestock herders) in the southern Mau Narok.

Methods

We continuously mapped broad land-use categories over a predetermined route through the grasslands by estimating the percentage cover of each habitat around points en route, at intervals of 1.5 km. Transects were conducted every 3 km to survey grassland birds in selected 1-ha plots within larger grasslands. Thirty-seven plots were surveyed. The area of each larger patch was recorded as <5, 5–20 or >20 ha, and the plots were surveyed by a team of six people spread across the width of the area, walking slowly across it 10–20 m apart. All species and individuals flushed were recorded. Measures of grassland quality were also noted within the plot using a system developed for monitoring grassland habitat in Kinangop. Grass height was recorded as G1 (short), G2 (medium length) and G3 (tall). Percentage tussock cover was recorded as T1 (no or just a few scattered tussocks), T2 (moderate tussock covering up to 30% of area), T3 (considerable tussock covering 30–60% of area), and T4 (dense tussock covering >60% of area). The number of livestock and other bird species within the entire patch were also recorded.

Results

Sixty species were recorded in the grassland patches surveyed. Sharpe's Longclaw occurred at a relatively high overall density, of 1.2 individuals per ha, throughout the 37 plots, i.e. slightly higher than the 0.85 per ha from sample plots in Kinangop recorded by Muchai *et al.*⁵. However, the Mau Narok/Molo density compares well with that noted only in those plots with short grass and tussocks at Kinangop⁵. The species occurred at 2.2 per ha in plots within grasslands of >20 ha, compared to those of <20 ha where the species occurred at densities of 0.2 per ha. Based on overall density, it was the fourth most abundant species after Black-winged Lapwing *Vanellus melanopterus*, Red-capped Lark *Calandrella cinerea* and Grassland Pipit *Anthus cinnamomeus*. Jackson's Widowbird *Euplectes jacksoni*, a Near-Threat-

ened species, was the fifth most abundant species. The longclaw was encountered in 17 out of 37 survey plots, and was the second most frequently encountered species after Grassland Pipit, which was recorded in 22 plots.

Aberdare Cisticola was recorded in only three plots, with a total of seven individuals, suggesting a low density. However, it is probable that the species was under-recorded during the counts as the transect method used was designed for surveying Sharpe's Longclaw and may not be as appropriate for the cisticola, which may also utilise different habitat. The few individuals to be located were all on or close to slightly bushy grassland. Other commonly encountered species (and the number of plots in which they were recorded) were Common Fiscal *Lanius collaris* (17), Red-capped Lark (14), Stonechat *Saxicola torquata* (ten), Baglafaecht Weaver *Ploceus baglafaecht* (nine) and Wing-snapping Cisticola *Cisticola ayresii* (eight).

As grasslands were estimated to cover one-third (c13,000 ha) of the IBA, the area surveyed was c0.3% of the IBA's grassland area. The plots were, however, within patches totalling approximately 2,150 ha (16.5%).

Grassland cover

Grasslands covered only one-third of the estimated area (c40,000 ha)¹ of the entire IBA (Table 1), while cultivation covered approximately 50%. The spatial distribution of grasslands varied between the Molo and Mau Narok areas of the IBA. Most (75%) of the 20 grassland patches surveyed in Narok district (southern Mau Narok) were >20 ha. Only 35% of the 17 patches in Nakuru district (Molo block and northern Mau Narok) were >20 ha in size. Grasslands in Molo occurred as patches of varying sizes and were mostly isolated by cultivation. The main crops in Molo were maize and pyrethrum. Wheat, barley and potatoes were also common.

Grassland extent and distribution in Mau Narok varied between that occupied by smallholders and that by the mainly pastoral Masai community. The north-west Mau Narok was heavily cultivated and only 14.4% held grasslands. Smallholders of the Kalenjin and Kikuyu communities, who mainly cultivate maize, potatoes and

Table 1. Percentage land-use within Molo (n=30) and Mau Narok (n=55) areas of the Mau Narok-Molo Grasslands Important Bird Area (IBA), Kenya. Estimates for the entire IBA (N=85) are also presented.

| Land use | Molo | | Mau Narok | | Entire IBA | |
|-------------------------|------|------|-----------|------|------------|------|
| | Mean | SD | Mean | SD | Mean | SD |
| Grassland | 33.3 | 23.6 | 33.2 | 19.7 | 33.3 | 21.0 |
| Cultivation | 45.1 | 22.6 | 49.2 | 18.9 | 47.8 | 20.3 |
| Exotic tree plantations | 14.0 | 8.4 | 6.2 | 5.6 | 9.0 | 7.6 |
| Settlements | 5.7 | 3.5 | 3.0 | 2.1 | 3.9 | 3.0 |
| Indigenous forest | 2.2 | 6.7 | 6.2 | 11.6 | 4.8 | 10.3 |
| Dams/water reservoirs | 0.1 | 0.5 | 0.0 | 0.0 | 0.0 | 0.3 |
| Woodland/thicket | 0.0 | 0.0 | 2.0 | 9.0 | 1.3 | 7.3 |

vegetables, occupied most of this area. Elsewhere in Mau Narok, where the Masai are the principal land-users, grasslands covered 43.2%. In particular, more extensive grasslands were found in two regions of Mau Narok: west of Mau Narok town around Olorkurto, and south of Mau Narok between Olorropil and south through Ol Chorro and Ol Joro.

Principal crops in cultivated areas of Masai land were barley and wheat, which mainly occurred on extensive farms accessible to agricultural machinery (Fig 2). The Masai community traditionally practised pastoralism and tended to abandon extensive pasture to their livestock (Fig 3). This practice is, however, becoming rarer due to the advent of large-scale crop cultivation. Barley and wheat, which are potentially more lucrative than livestock farming, are currently being increasingly cultivated and pose a major threat, especially to large grasslands in southern Mau Narok. The remaining grasslands are now heavily grazed as the pastoralists still herd large numbers of cattle.

In comparison to Kinangop Grasslands IBA, the rem-

nant grasslands at Mau Narok/Molo IBA were larger, although isolated by large areas under cereals, probably because most land holdings are larger in Mau Narok and Molo than in Kinangop⁶.

Throughout the study area continuous grasslands appear to survive mostly along shallow sloping valleys. Seventeen (46%) of the surveyed grasslands were along watercourses and none was <5 ha. Most grasslands were heavily grazed and had short grass, as the Masai keep large herds of cattle on these areas. We counted 2,351 cows, 7,307 sheep and goats, and 42 donkeys within an area of c2,000 ha, at a grazing intensity of nine large animal units (LAU) per ha. We assume that a single LAU is equivalent to one cow or five sheep, and represents the metabolic equivalent of a 454-kg cow⁷.

A higher proportion (15) of the plots had moderate tussock cover. Only two plots had dense tussock, whereas nine plots completely lacked or had just a few scattered tussocks. Sharpe's Longclaw strongly prefers short grass with tussocks^{3,4}. Most of the survey plots (62%) had short grass with tussocks.

Most (20) of the surveyed grasslands were >20 ha, whereas 13 were 5–20 ha. Only four patches were <5 ha in size. The 82 points where land-use was surveyed covered a total area of 14,496 ha (c36% of the IBA).

Training SSG members, awareness and contacts

The three SSG members from Kinangop gained skills in grassland bird survey techniques. Posters have been developed by the Friends of Kinangop Plateau to raise awareness concerning the importance of conserving Kinangop Grassland IBA, which faces similar threats to Mau Narok/Molo. Thirteen of the latter posters, 22 national posters with information concerning all Kenyan IBAs and 25 Kenyan IBA fact sheets were distributed. Talks outlin-



Figure 2. Large barley and wheat plantations are replacing grasslands, with small grassland strips being left along watercourses (Kariuki Ndang'ang'a)



Figure 3. Remnant areas of the preferred habitat of Sharpe's Longclaw *Macronyx sharpei* (short grass with tussocks) in the Masai-occupied area of Olorkurto area, Mau Narok (Kariuki Ndang'ang'a)



Figure 4. A survey member presents an awareness talk to pupils at a local primary school in Molo (Kariuki Ndang'ang'a)

ing the conservation importance of the IBA were made to children and teachers at two schools (By-Gum and Segututou primary schools), and informative material presented to a student and headmaster at two additional schools (Fig 4). Seven contacts keen to form a Site Support Group were made.

Recommendations

- Initiate Site Support Group(s) for the IBA, based on existing and other, strategically sought contacts.
- Identify landowners and/or community leaders who control the management of large areas of land, and use them as focal points to influence management of such areas to the benefit of conservation.
- Determine those grassland management practices (eg stocking levels) that are compatible with conservation of key bird species, and the economic costs of their adoption, through well-focused research.

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